

WHAT IS CLAIMED IS:

1. A method of extinguishing a fire, comprising the steps of

introducing to the fire a fire extinguishing composition consisting of at least one unsaturated perfluorocarbon compound having the formula

5



where x is 3 or 4 and y is 6 or 8, respectively,

and maintaining the concentration until the fire is extinguished.

2. The method of claim 1, wherein the perfluorocarbon is selected from the group consisting of hexafluoropropene, octafluoro-1-butene, and octafluoro-2-butene.

3. The method of claim 1, wherein the composition is a mixture of at least two unsaturated perfluorocarbons.

4. The method of claim 3, wherein each of the perfluorocarbons is selected from the group consisting of hexafluoropropene, octafluoro-1-butene, and octafluoro-2-butene.

5. The method of claim 1, wherein the composition includes a mixture of conventional fire extinguishing agents.

6. The method of claim 5, wherein the perfluorocarbon is selected from the group consisting of hexafluoropropene, octafluoro-1-butene, and octafluoro-2-butene.

7. The method of claim 1, wherein the composition has a concentration level of at least about 4% (v/v).

8. The method of claim 1, wherein the step of introducing comprises total flooding.

9. The method of claim 1, wherein the step of introducing occurs in an enclosed region.

10. The method of claim 1, wherein the step of introducing includes using an inert gas to pressurize the composition sufficiently to maintain an adequate flow of the composition toward the fire.

11. The method of claim 1, wherein the composition has low thermal stability.

12. The method of claim 1, wherein the perfluorocarbon compound has a residue of no more than about 1.00% (w/w).

13. The method of claim 1, wherein the perfluorocarbon compound is compatible with metals and nonmetals.

14. The method of claim 1, wherein the perfluorocarbon compound does not exhibit short-term toxicity.

15. The method of claim 4, wherein the composition has a concentration level of at least about 4% (v/v).

16. The method of claim 15, wherein the step of introducing includes using an inert gas to pressurize the composition sufficiently to maintain an adequate flow of the composition toward the fire.

17. The method of claim 1, wherein the step of introducing includes providing the composition in a portable fire extinguisher.

18. The method of claim 17, wherein the perfluorocarbon is selected from the group consisting of hexafluoropropene, octafluoro-1-butene, and octafluoro-2-butene.

19. The method of claim 18, wherein the step of introducing includes using an inert gas to pressurize the composition sufficiently to maintain an adequate flow of the composition toward the fire.

20. The method of claim 18, wherein the perfluorocarbon compound has a residue of no more than about 1.00% (w/w).

21. A method of using at least one unsaturated perfluorocarbon having the formula  $C_xF_y$ , where x is 3 or 4 and y is 6 or 8, respectively, for extinguishing fires.

22. The method of claim 21, wherein the perfluorocarbon is selected from the group consisting of hexafluoropropene, octafluoro-1-butene, and octafluoro-2-butene.

23. A composition consisting of at least one unsaturated perfluorocarbon having the formula  $C_xF_y$ , where x is 3 or 4 and y is 6 or 8, respectively, at a concentration level sufficient to extinguish a fire.

24. The method of claim 23, wherein the perfluorocarbon is selected from the group consisting of hexafluoropropene, octafluoro-1-butene, and octafluoro-2-butene.

